



Response to Office Action dated April 13, 2006
Amendment dated September 12, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (Currently Amended) A device for processing data recorded on an optical recording medium, comprising:

a pickup unit to detect a signal reflected from the optical recording medium, the optical recording medium including normal data formed in a marked phase and an unmarked phase, a minimum length of the marked phase or unmarked phase being $2T$, T being a channel bit clock, and the normal data to be restored into original data; and

a signal processor to process the signal output from the pickup unit, thereby to output a binary signal which includes data corresponding to the minimum length,

wherein the signal processor includes first and second signal converters to output first and second signals, respectively.

2-12. (Canceled)

13. (Previously Presented) The device of claim 1, wherein the minimum length of the marked phase is shorter than a radius of a beam spot.

14-15. (Cancelled)

16. (Previously Presented) The device of claim 1, wherein the normal data comprises data other than control data controlling how the data recorded on the optical recording medium is processed.

17-18. (Canceled)

19. (New) The device of claim 1, wherein the first and second signals comprise binary signals.

20. (New) The device of claim 19, wherein the signal processor further includes a signal detector to detect a high-frequency signal reproduced from the pickup unit, and

wherein the first signal converter converts the high-frequency signal into the first binary signal using a first reference level and converts the high-frequency signal into the second binary signal using a second reference level.

21. (New) The device of claim 20, further comprising:

a logic circuitry to conduct an exclusive-OR logic operation on the first and second binary signals to obtain a difference signal having a high pulse where levels of the first and second binary signals are different from each other.

22. (New) The device of claim 21, further comprising:

a cyclic pulse generator to generate a periodic pulse signal synchronized with the first binary signal; and

a signal selector to select and output the first binary signal when the difference signal from the logic circuitry is low and to output the periodic pulse signal when the difference signal is high.

23. (New) The device of claim 1, wherein the first and second signal converters comprise analog-to-digital converters.

24. (New) A method for processing data recorded on an optical recording medium, comprising:

detecting a signal reflected from the optical recording medium and converting the signal into a high-frequency signal, the optical recording medium including normal data formed in a marked phase and an unmarked phase, a minimum length of the marked phase or unmarked phase being $2T$, T being a channel bit clock, and the normal data to be restored into original data;

converting the high-frequency signal into a first binary signal using a first reference level;
converting the high-frequency signal into a second binary signal using a second reference level;

performing an exclusive-OR logic operation on the first and second binary signals to obtain a difference signal having a high pulse where levels of the first and second binary signals are different from each other;

generating a periodic pulse signal synchronized with the first binary signal; and
selecting and outputting the first binary signal when the difference signal from the logic circuitry is low and outputting the periodic pulse signal when the difference signal is high.

25. (New) The method of claim 24, wherein the minimum length of the marked phase is shorter than a radius of a beam spot.

26. (New) The method of claim 24, wherein the normal data comprises data other than control data controlling how the data recorded on the optical recording medium is processed.